

CLAIMS

1. (Previously Presented) A method of forming a product selected from at least one of a gel and a powder, the method comprising oxidatively treating a liquid precursor in at least one of a non-thermal equilibrium plasma discharge and an ionized gas stream resulting therefrom and collecting the resulting product, wherein the liquid precursor is selected from at least one organometallic liquid precursor, at least one organometalloid liquid precursor, and mixtures thereof and wherein the liquid precursor is introduced into the non-thermal equilibrium plasma in the form of an atomized liquid.
2. (Previously Presented) A method in accordance with claim 1 wherein the liquid precursor is transported through at least one of an atmospheric plasma discharge and an ionized gas stream resulting therefrom, by being dropped under gravity or entrained in a carrier gas.
3. (Cancelled).
4. (Cancelled).

5. (Original) A method in accordance with claim 4 wherein the atomized liquid is introduced into the non-thermal equilibrium plasma by direct injection.
6. (Previously Presented) A method in accordance with claim 1 wherein the non-thermal equilibrium plasma is an atmospheric plasma glow discharge.
7. (Previously Presented) A method in accordance with claim 1 wherein the non-thermal equilibrium plasma is selected from a continuous low pressure glow discharge plasma, a low pressure pulse plasma and a dielectric barrier discharge.
8. (Previously Presented) A method in accordance with claim 1 wherein the liquid precursor is at least one of an organometallic compound of titanium, zirconium, iron, aluminium, indium and tin.
9. (Previously Presented) A method in accordance with claim 1 wherein the liquid precursor is an organometalloid compound of germanium or silicon.
10. (Previously Presented) A method in accordance with claim 9 wherein the silicon organometalloid compound is an organopolysiloxane having a viscosity of from 0.65 mPa.s. to 1000 mPa.s.

Claims 11-13. (Cancelled).

14. (Previously Presented) The method according to claim 1 wherein the step of treating is carried out using an apparatus comprising a means for generating a nonthermal equilibrium plasma, a means of at least one of introducing and retaining liquid precursor, wherein the means of introducing the liquid precursor is an atomizer.
15. (Previously Presented) The method in accordance with claim 14 wherein said apparatus is an atmospheric pressure glow discharge assembly wherein the atmospheric plasma is generated between spaced apart parallel electrodes which are flat, parallel or concentric parallel electrodes.
16. (Previously Presented) The method in accordance with claim 14 comprising a pair of vertically arrayed, parallel spaced-apart planar electrodes with at least one dielectric plate between the pair of electrodes, adjacent one electrode, the spacing between the dielectric plate and the other dielectric plate or electrode forming a plasma region.
17. (Previously Presented) The method in accordance with claim 16 wherein each electrode is in the form of a watertight box having a side formed by a dielectric plate having bonded thereto on the interior of the box a planar electrode together with a

liquid inlet adapted to spray water or an aqueous solution onto the face of the planar electrode.

18. (Cancelled)
19. (Previously Presented) A method in accordance with claim 9 wherein the silicon organometalloid compound is an organopolysiloxane having a viscosity of from 100 mPa.s to 1,000,000 mPa.s. dissolved in at least one of an organic solvent and an organosilicone solvent.